

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

William Y. Conwell

Application No.: 09/670,113

Filed: September 26, 2000

For: METHOD OF PROCESSING TEXT  
FOUND IN IMAGES

Art Unit 2621

Confirmation No. 4862

VIA ELECTRONIC FILING

Examiner: S. Patel

Date: February 5, 2008

Mail Stop: Board of Appeals  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

**SUBMISSION OF NEW BPAI DECISION RE DIGITAL WATERMARKING**

Sir:

On January 31, 2008, the Board issued a precedential decision in appeal 2007-4254. In it, the Board considered the meaning of the terms “digital watermarking” and steganography, and contrasted same with bar-code art.

The Board’s decision is believed pertinent to the issues in the present application, and so a copy is submitted herewith.

Date: February 5, 2008

**CUSTOMER NUMBER 23735**

Respectfully submitted,

DIGIMARC CORPORATION

Phone: 503-469-4800  
FAX 503-469-4777

By /William Y Conwell/  
William Y. Conwell  
Registration No. 31,943

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* BRETT T. HANNIGAN, RAVI K. SHARMA,  
STEPHEN K. DECKER, PHILLIP ANDREW SEDER,  
TONY F. RODRIGUEZ, and ANDREW KLONSKY

---

Appeal 2007-4254  
Application 10/139,147  
Technology Center 3600

---

Decided: January 31, 2008

---

Before MURRIEL E. CRAWFORD, HUBERT C. LORIN, and  
MICHAEL W. O'NEILL, *Administrative Patent Judges*.

O'NEILL, *Administrative Patent Judge*.

DECISION ON APPEAL

## STATEMENT OF THE CASE

Hannigan (Appellants) seek our review under 35 U.S.C. § 134 of the final rejection of claims 1-3, 5-13, 15-28, 30, and 31. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

## SUMMARY OF DECISION

We REVERSE.<sup>1</sup>

## THE INVENTION

The Appellants' claimed invention is to providing an interactive link between a toy or game and a computer (Specification, 10:25-28). The toy or game carries hidden digital information in a digital watermark that informs the computer the nature of the toy or object in the game, its location and orientation (Specification, 10:29 to 11:2). The watermark is embedded in an image on the toy and its visibility should not affect the artistic value of the toy. (Specification 11:2-4 and 12:28.) A camera captures an image of the toy, software on the computer performs the watermark detection, and on detection actions are initiated. (Specification 12:6-18.)

---

<sup>1</sup> Our decision will make reference to Appellants' Appeal Brief ("App. Br.," filed Apr. 26, 2006), Reply Brief ("Reply Br.," filed Sep. 12, 2006), the Examiner's Answer ("Answer," mailed Jul. 14, 2006), and the Final Rejection ("Final Rejection," mailed Nov. 11, 2005).

Claims 1, 5, 9, 10, and 15, reproduced below, are representative of the subject matter on appeal.

1. A toy system comprising:

a plurality of toy components, each toy component bearing a digital watermark imperceptibly embedded on a surface thereof;

an image capture device; and

a programmed computer coupled to the image capture device and operable to receive images of the toy components, and in response to the images, decoding digital watermarks from the images and executing actions associated with the digital watermarks;

wherein different actions are respectively associated with the toy components, and wherein the programmed computer is operable to execute different actions in response to receiving separate instances of images captured of the same toy component.

5. A method of enhancing a computer game comprising:

generating optical scan data corresponding to an object including plural-bit data steganographically encoded therein;

processing the optical scan data to extract plural-bit data steganographically encoded therein;

wherein the plural-bit data corresponds to at least one game attribute; and

accommodating the at least one attribute to modify the  
computer game.

9. A method of playing a computer game comprising:
  - upon presentment of a digitally watermarked object,  
capturing an image of the object with an input device;
  - analyzing the captured image to decode a digital  
watermark embedded therein, the digital watermark  
including an identifier;
  - interrogating a database with the identifier to determine  
at least one game attribute associated with identifier;  
and
  - modifying the at least one attribute to reflect activity  
during play of the computer game.
10. A system for maintaining game information comprising:
  - a first user terminal having computer executable code  
stored thereon, the executable code including code for  
operation of a computer game; and
  - a database in communication with the first user terminal,  
said database including a plurality of data entries, the  
data entries organized according to identifiers, said  
data entries being available for cooperation with the  
computer game's code upon a request from the first  
user terminal, wherein the first user terminal requests  
at least a first data entry associated with a first  
identifier, the first identifier being obtained from data  
encoded in a physical object,
- wherein the first data entry is modified based on game  
interaction.

15. A computer comprising:

a communications bus;

memory having executable software code stored thereon;  
and

a processor in communication with said memory via said communications bus, said processor to execute the software code stored in said memory, wherein the software code comprises code to:

decode a digital watermark, the watermark including a unique identifier;

communicate the unique identifier to a database to retrieve game or character attribute information, the information being associated with the unique identifier;

handle the game or character attribute information when received from the database; and

modify at least one characteristic or operation of a software computer game in accordance with the received game or character attribute information.

## THE PRIOR ART

The Examiner relies upon the following as evidence of unpatentability:

Mero	US 5,810,666	Sep. 22, 1998
Dougherty	US 6,076,734	Jun. 20, 2000
Berstis	US 6,229,526 B1	May 8, 2001
Piernot	US 6,417,663 B1	Jul. 9, 2002

### THE REJECTIONS

The following rejections are before us for review<sup>2</sup>:

1. Claims 1-4 and 29 are rejected under 35 U.S.C. § 102(e) as being anticipated by Dougherty.
2. Claim 30 is rejected under 35 U.S.C. § 102(e) as being anticipated by Piernot.
3. Claim 9-28 are rejected under 35 U.S.C. § 102(b) as being anticipated by Mero.
4. Claims 5-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mero in view of Dougherty.
5. Claim 31 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Piernot in view of Berstis.

### ISSUES

The first issue is whether the Appellants have shown that the Examiner erred in rejecting claims 1-4 and 29 as being anticipated by Dougherty.<sup>3</sup> The second issue is whether the Appellants have shown that the Examiner erred in rejecting claim 30 as anticipated by Piernot. The third issue is whether the Appellants have shown that the Examiner erred in

---

<sup>2</sup> The Examiner has withdrawn the rejection of claims 1-4 under 35 U.S.C. § 112, second paragraph. (Answer, 8.) As such, the rejection is not before us for review.

<sup>3</sup> Only those arguments actually made by Appellants have been considered in this decision. Arguments that Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2007).



rejecting claims 9-28 as being anticipated by Mero. The fourth issue is whether the Appellants have shown that the Examiner erred in rejecting claim 5-8 as being unpatentable over Mero and Dougherty. The fifth issue is whether the Appellants have shown that the Examiner erred in rejecting claim 31 as being unpatentable over Piernot in view of Berstis.

For claims 1, 9, 11, 15-17, 21, and 30 the issue of whether the Appellants have shown error turns on whether a machine readable bar code fits within the definition of a digital watermark as defined by the Appellants' Specification. For claim 10 the issue of whether the Appellants have shown error turns on whether Mero reads on the claim limitations. For claim 5 the issue of whether the Appellants have shown error turns on whether Mero and Dougherty teach steganographically extracting data.

## FINDINGS OF FACT

We find that the following enumerated findings of fact are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. The Appellants' Specification defines digital watermarking as "a process for modifying physical or electronic media to embed a machine-readable code into the media. The media may be modified such that the embedded code is imperceptible or nearly imperceptible to the user, yet may be detected through an automated detection process." (Specification 1:20-24.)
2. The Appellants' Specification does not define steganography. As such, the definition to one of ordinary skill in the art applies: the art of concealing the existence of information within seemingly innocuous carriers. Neil F. Johnson, *Steganography*, Technical Report, November 1995, [http://www.jjtc.com/pub/tr\\_95\\_11\\_nfj/index.html](http://www.jjtc.com/pub/tr_95_11_nfj/index.html) (original paper placed on the web in 1996).
3. A machine readable bar code is a printed horizontal strip of vertical bars of varying widths, groups of which represent decimal digits and are used for identifying commercial products or parts. Bar codes are read by a bar code reader and the code interpreted either through software or a hardware decoder. Free On-Line Dictionary of

Appeal 2007-4254  
Application 10/139,147

Computing, <http://foldoc.org/index.cgi?query=bar+code> (last visited Jan. 22, 2008).

*The scope and content of the prior art*

4. Mero discloses role playing games that involve trading cards. (Mero, col. 1, ll. 4-5.) The trading cards are individually numbered to make each unique. (Mero, col. 2, ll. 3-4.) The first side of each card contains information about the card including a graphical picture or card art and a number and perhaps an associated bar code. (Mero, col. 7, l. 66 to col. 8, l. 16.) The numbering system allows for manual entry (using the number) or scanning (using the bar code) of each card into a database suitable for registering and tracking all game cards. Once a player has entered a given card into the database, no other player will be able to use that card until it is removed from the database. Thus, any one card may only be used by one player at any given time. (Mero, col. 8, ll. 51-65.)

*The level of skill in the art*

5. Neither the Examiner nor Appellants have addressed the level of ordinary skill in the pertinent arts of concealing data within a media. As such, we will therefore consider the cited prior art as representative of the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d. 1350, 1355 (Fed. Cir. 2001) (“[T]he absence of specific findings on the level of skill in the art does not give rise to reversible error ‘where the prior art itself reflects an appropriate level and a need for testimony is not shown.’”) (Quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985).

*Secondary considerations*

6. There is no evidence on record of secondary considerations of non-obviousness for our consideration.

PRINCIPLES OF LAW

Claims are given the broadest reasonable construction consistent with the specification. *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). “Words which are defined in the specification must be given the same meaning when used in a claim.” *McGill, Inc. v. John Zink Co.*, 736 F.2d 666, 674 (Fed. Cir.), *cert. denied*, 469 U.S. 1037 (1984). While the patent application’s prosecution history is part of the intrinsic evidence used to construe claims because it “represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987).

It is well settled that in order for the examiner to establish a *prima facie* case of anticipation, each and every element of the claimed invention, arranged as required by the claim, must be found in a single prior art

reference, either expressly or under the principles of inherency. *See generally, In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997); *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677-78 (Fed. Cir. 1988); *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick*, 730 F.2d 1452, 1458 (Fed. Cir. 1984).

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S.Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

It is elementary that to support an obviousness rejection, all of the claim limitations must be taught or suggested by the prior art applied (*see In re Royka*, 490 F.2d 981, 984-85 (CCPA 1974)) and that all words in a claim must be considered in judging the patentability of that claim against the prior art (*In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970)).

## ANALYSIS

We will not sustain the Examiner's rejection of claims 1, 9, 11, 15-17, 21, and 30. As pointed out by the Appellants throughout the Brief, the Examiner erred in stating a bar code reads on a digital watermark. As we understand digital watermarks and bar codes from the perspective of one of ordinary skill in the art, the evidence would suggest that one of ordinary skill would not equate the two. A digital watermark is embedded in the media (e.g. images, audio signals, video signals, software documents, software). (Finding of Fact 1.) A bar code is a band of printed horizontal strip of vertical bars of varying widths, groups of which represent decimal digits and are used for identifying objects (e.g. commercial products, inventory, asset information (for instance, PTO's computer property assigned to an employee)) that is placed on the object or media. (Finding of Fact 3.) A digital watermark is imperceptible or nearly imperceptible to a user hence from a practical standpoint the watermark is hidden from the user, whereas a bar code is perceptible and not hidden. As such, though both digital watermarks and bar codes have a common characteristic of being read by a machine to one skilled in the art they are not the same or equivalent structures because of the differences as stated in the Appellants' Brief as well and *supra*. (See also Finding of Facts 1 and 3). For the same reasons, the rejections of the claims that depend from claims 1, 9, 11, 15-17, 21, and 30 are not sustained.

We will not sustain the Examiner's rejection of claim 5 because the Examiner erred, as pointed out by the Appellants (Brief, page 28), in stating a bar code teaches steganographically encoded data. Steganographical data is concealed in otherwise innocuous data. (Finding of Fact 2.) A bar code is not concealed in any other data. Moreover, bar code data concealed in an innocuous carrier would defeat the purpose of bar codes which is to quickly extract the information needed to identify the object the bar code is attached thereto. Dougherty does not appear to make up for the deficiency in Mero. For the same reasons, any rejections to any claims that depend from claim 5 are not sustained.

We will not sustain the Examiner's rejection of claim 10. As the Appellants have pointed out in the Brief on page 18 the Final Rejection does not individually discuss how Mero should be applied to teach or suggest a database in communication with a first user terminal, where the database includes a plurality of data entries organized according to identifiers. With agree with the Appellants that the Final Rejection does not discuss how Mero should be applied to teach or suggest that the data entries are available for cooperation with computer game code upon a request from the first user terminal, where the first user terminal request at least a first data entry associated with a first identifier obtainable from data encoded in a physical object. Further, the Final Rejection does not address how Mero should be applied to teach or suggest that the first data entry is modified based on game interaction. As we see Mero, the trading cards are individually



numbered to make each unique. The one side of each card contains information about the card including: a graphical picture or card art, a number, and perhaps an associated bar code. The numbering system allows for manual entry (using the number) or scanning (using the bar code) of each card into a database suitable for registering and tracking all game cards. Once a player has entered a given card into the database, no other player will be able to use that card until it is removed from the database. As such, any one card may only be used by one player at any given time. (*See Finding of Fact 4.*) Thus, the Final Rejection fails to make out a prima facie case. For the same reasons, any rejections to any claims that depend from claim 10 are not sustained.

### CONCLUSIONS OF LAW

We conclude that the Appellants have shown that the Examiner erred in rejecting claims 1-3, 5-13, 15-28, 30, and 31.

### DECISION

The decision of the Examiner to reject claims 1-3, 5-13, 15-28, 30, and 31 is reversed.

REVERSED

Appeal 2007-4254  
Application 10/139,147

jlb

DIGIMARC CORPORATION  
9405 SW GEMINI DRIVE  
BEAVERTON OR 97008